

Notice of Allowability

Application No.

09/823,913

Examiner

Alexis Wachtel

Applicant(s)

PATZNER, NORBERT

Art Unit

1764

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 3-30-01.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 30 March 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Detailed Action

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Walter Fasse on 5-20-04.

The application has been amended as follows:

1. A reactor for a cooling installation performing an adsorption and desorption process, especially with zeolite (27) as adsorbent and with water as adsorbate, the interior (24) vacuum-tight housing (17) being connectable to a vacuum generator (9) and to a vessel (6) containing water, and having a heating device (28) and a sealable outlet opening for water vapor, wherein at least one inner vessel containing the zeolite is provided and has a vessel wall (23), which is permeable to air and water vapor and that at least one heating device (28) is arranged in the interior (25) of the inner vessel (22).

2. The reactor as claimed in claim 1, wherein multiple inner vessels (22) each with air and water vapor-permeable vessel wall (23) are arranged the housing (17).

3. The reactor as claimed in claim 1, wherein the length (L) of the inner vessel (22) is very large in relation to the dimensions of its cross section.

4. The reactor as claimed in claim 1, wherein the inner vessel (22) is cylindrical.
5. The reactor as claimed in claim 1, wherein the inner vessel (22) is rod-shaped.
6. The reactor as claimed in claim 1, wherein the cross section of the inner vessel is polygonal.
7. The reactor as claimed in claim 1, wherein the vessel wall (23) is composed of wire mesh claimed in claim 1, wherein heating element (29) is provided as heating device (28) and is arranged along the axis of the inner vessel (22).
8. The reactor as claimed in claim 1, wherein the heating element (29) is an electrical heating element.
10. The reactor as claimed in claim 1, wherein the heating element (29) is a heating tube for a hot liquid/heating oil and is arranged along the axis (30) of the inner vessel (22).
11. The reactor as claimed in claim 1, wherein the heat-conducting elements (34), (40) are arranged in the packing (26) composed of zeolite (27) and are connected to the heating device (28).
12. The reactor as claimed in claim 1, wherein the heat-conducting elements (34) are fin or disk-shaped.
13. The reactor as claimed in claim 1, wherein the heating conducting element is copper wire mesh.

14. The reactor as claimed claim 1, wherein a metal network is provided as heat-conducting element, which surrounds the heating element (29), and that the zeolite (27) is large extent positively embedded in the metal network.
15. The reactor as claimed in claim 1, wherein the arrangement of the heating elements/heating tubes for the liquid/heating is rotationally symmetrical.
16. The reactor as claimed in claim 1, wherein lines (10, and 13) are arranged at one end face (35) of the housing (47) as feed line or return line respectively for hot liquid/heating oil.

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance: No prior art has been found to teach or suggest the reactor as claimed in claim 1. US 5,477,706 to Kirol et al teaches a cooling system that includes a reactor (20) performing an adsorption and desorption process with the use of zeolite (Col 3, line 13). The reactor (20) includes a heating system (36). Refrigerant come into contact with the adsorbent material via valves (31; 33). However, Kirol fails to disclose an inner vessel containing the zeolite which is permeable to air and water vapor. In particular Kirol only teaches that the zeolite adsorbent is contained in a single container that functions to isolate the zeolite adsorbent from the external environment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Prior Art of Record

3. The prior art of record and not relied upon is considered pertinent to Applicant's disclosure. In addition, the following references are cited for disclosing various aspects of Applicant's invention:

US 5768908; US 5419156; US 4479364; US 4660629; US 5802870; US 5291942; US 6601404; US 1954056; US 6526776; US 5660049; US 4765395; US 5845507; US 2370643; US 4183227; US 6532762; US 6125649; US 5477706

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700